Empowering Women in Making Crop-dairy Farming Climate Smart

Workshop on

'Empowering Women for Climate Smart Crop-Dairy Farming Systems: Post Harvest Management, Value Chains and Market'

(May 23-24, 2017)

Organized Jointly by

ICAR-NDRI, ICAR-CSSRI & CIMMYT

Under the aegis of

Climate Change Agriculture and Food Security (CCAFS)

Organized at

ICAR-National Dairy Research Institute, Karnal (HR)- 132 001

CIMMYT International Maize and Wheat Improvement Center

ICAR

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CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

Rationale:

Appropriate technological solutions together with empowering social environment are the basic requirements for ensuring food and livelihood security under the emerging scenario of growing climate risks. Studies by various scientists (Farnworth et. al., 2017; Das et. al., 2015; Chayal et. al., 2013; Waris and Viraktamath, 2013; Dev, 2012; Gosh, 2010) also identified the importance of gender empowerment in agriculture and have found the gender gap in agriculture in India. Through capacity building programs, CIMMYT-CCAFS is aiming to foster Climate Smart Agriculture (CSA) and related activities to women farmers so that issue of knowledge gap between men and women involved in farming is addressed. Similarly a recent workshop was organized to further enhance the role of women in decision making.

The workshop objectives were to:

1. Adoption of climate smart technologies among women farmers to increase decision making by getting engaged in farm budgeting and agri-allied activities
2. Entrepreneur skill development on post-harvest technologies (namely grain storage, fodder management), livestock management (feeding, milking, milk processing etc.), market knowledge (on raw produce and processed product from farming) and value creation (processing and branding), thereby translating it into income source.

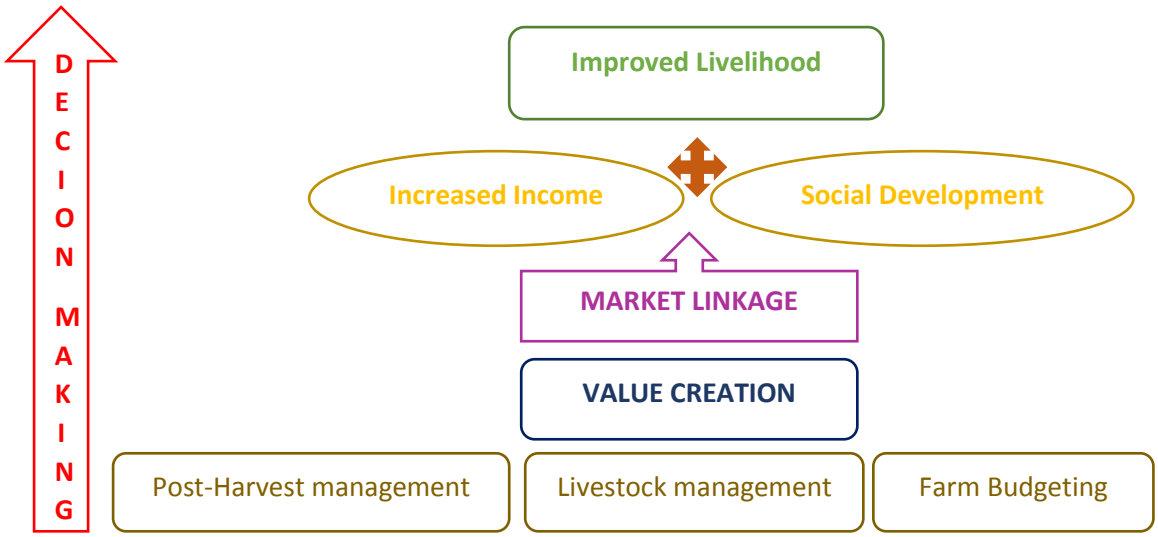

Figure 1: Schematic representation of workshop design

The quality of crop and livestock produce depends on management and their interaction with climate. Infected crop and animal always produces the low quality output which requires special intention during post-harvest management. Post-harvest management is really required to address the crop loss during storage in most economical and labour efficient manner. Similarly, how best the livestock can be reared and increased produce capacity with expected climate change by increasing their adaptability through nutrition and shelter management techniques. Only increased produce cannot translate in increased income. For that there are required value creation mechanisms by producing by-products and selling at competitive prices with suitable market linkages. Initiating at small-scale and gradually converging into small self-help groups, targets to meet socio-economic development of women farmers and social recognition with respect to innovative agriculture technologies. Successive approaches, are aimed to generate improved

livelihood opportunities with multi-facet activities. With each step ahead towards improved livelihood, there is improved level of decision making observed.

Event

To address this issue a Workshop on "Empowering Women for Climate Smart Crop-Dairy Farming Systems: *Post Harvest Management, Value Chains and Market*" for capacity development of Women from Climate Smart Villages (CSVs) of Karnal was organized jointly by ICAR (Indian Council of Agricultural Research)-NDRI (National Dairy Research Institute), ICAR-CSSRI (Central Soil Salinity Research Institute) and CIMMYT (International Maize & Wheat Improvement Centre) during May 23-24, 2017 at Krishi Vigyan Kendra (KVK), NDRI, Karnal under the Flagship of Climate Change Agriculture and Food Security (CCAFS). CCAFS is a major research partnership between the CGIAR and the global environmental change community to overcome the threats to agriculture and food security in changing climate.

At the Inaugural, Dr. RBB Singh, Director, NDRI, referred to sensitization of the technologies through these workshops for knowledge dissemination and enhanced learning. There has been tremendous increase in milk production to meet the population growth rate. Technology intervention has been limited due to scattered milk production wherein women play major role in dairy rearing and livestock management to keep milk production uptake. Dr. ML Jat, Principal Scientist, CIMMYT, stated "World Bank suggests an increase in agriculture production by 20% with empowered women" which necessitates optimum utilization of youth and women capacity. Added decision making role and involvement in terms of farm budgeting, household and farm, will derive socio-economic returns to society. Need to reduce post-harvest losses and diversification was also addressed for which sessions are organized in the training. He strongly emphasized upon technology adoption and highlights the adverse effects of residue burning, farm budgeting to enhance household decision making of women

Dr. PC Sharma, Director, CSSRI, elucidated given changing climate and erratic rainfall, the adversities faced in agriculture and thus role of land and water management by involving women. He emphasized the climate smart an agriculture practice enhances the nutritional quality of grains and straw. The animal feed on that will definitely produce good quality milk which results in quality products that can be preserved for longer time. Not only milk production but value addition like dairy products (namely Cheese, Paneer, Khoya, sweets, etc.) and initially linking with market at small scale level is required. Coming together in groups and gradually formalizing will set platform for economic returns. Practical training on high quality products will be provided in the workshop to build capacity of women farmers.

Dr DK Gosain heavily focused on importance of milk preservation and said that farm families should value add the farm products so that their products will be sold at higher prices and women should work in groups in order to get best results.

Dr. HS Jat, Sr. Scientist, CIMMYT, graced all the participants for attending the event and presented vote of thanks. To give a boost to the workshop, the associated women farmers already practicing climate smart technologies shared their experiences and how they look forward for this training to make then self-sustainable and respected. \

Dr. Deepa Chandra, Technical Officer, KVK NDRI, Haryana along with other subject expert facilitators provided hands-on training on Post Harvest Management of Fruits & Vegetables, scientific dairy farming, dairy product making, etc. These all aim at women undertaking training activities organized and tap as an opportunity to forego obstacles hindering their success path.

Picture 1. Dr M.L Jat, Principal scientist CIMMYT addressing the participants to adopt climate smart technologies.

Participants were taught importance of crop-dairy farming system and its interconnections and functional relation between different components of farming systems. Also how farm families should add value to the farm products so that their products can be sold at higher prices along with potential market scope of their value added products Practical sessions were organized for skill development to meet competitive market of existing established sellers.

Knowledge of modern techniques in livestock management provided in order to increase income and yield of household. Methods to increase shelf life of dairy, grains, fruits and vegetables was disseminated to prevent food spoilage before disbursed for markets.

Feedback and Learnings

Need based training and knowledge dissemination was targeted for efficient utilization of workshop. Thus, pre-workshop questions were asked about their current knowledge and aspired learnings. The workshop was targeted as per the deemed essential components to be addressed to meet learning aspirations. After the workshop, feedback was collected to record their knowledge gain and future desired learnings. Systematic synthesis and analysis of data collected was done to capture the feedback in most efficient manner. Forms were evaluated and scoring was given.

Primarily the participant data was distributed based upon their personal characteristics of education and age. This was highlighted to create the prospect women farmers which can be targeted as progressive women farmers for scaling. For instance a young educated women farmer is more likely to adopt technologies given required trainings

Table 1. Distribution of respondent according to selected personal characteristics

Age	Percent
Below 25	42
Between 25-35	39
Above 35	19
Education	
Uneducated	3.2
Primary	35.5
Secondary	9.7
Higher secondary	22.6
Graduate	16.1
Post graduate	12.9

Table one shows that eighty one percent of participants were below 35 years of age and 97 percent participants have completed atleast primary education. With this young educated group a good initiative may go a long way for scaling CSAPs.

Figure 2. represents the adoption pattern of climate smart technologies across villages. It was analysed to understand the current scenario and on what aspects further trainings are required for scaling.

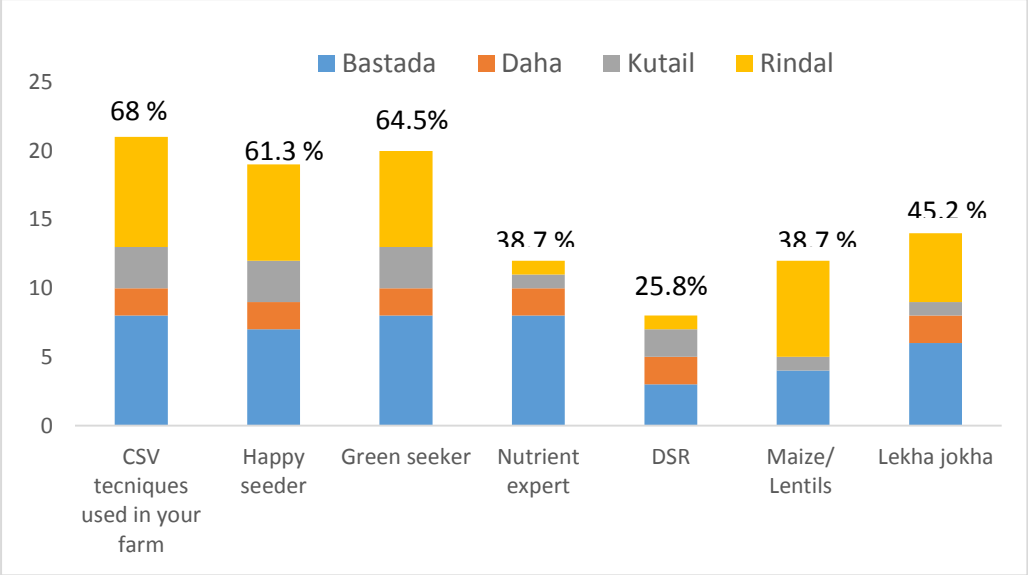

Figure 2: Village-wise involvement of farmers in each climate smart technology

From the above data we can observe that 68 percent female farmers in the training were already using some kind of climate smart techniques at their farms. Sixty five percent of them are using green seeker based nitrogen application while 61 percent female stated that they use turbo happy seeder for wheat sowing. Thirty nine percent farmers among them use nutrient expert based fertilizer application and twenty seven percent use direct seeded rice method. Fourty five percent among them practice habit of keeping lekha jokha of their agriculture activities and 39 percent do practice crop rotation practice by either shifting to maize or growing legumes.

To understand how the workshop helped in improving knowledge there was pre and post analysis done. Increase of knowledge was calculated in percentage terms, as given in figure 3.

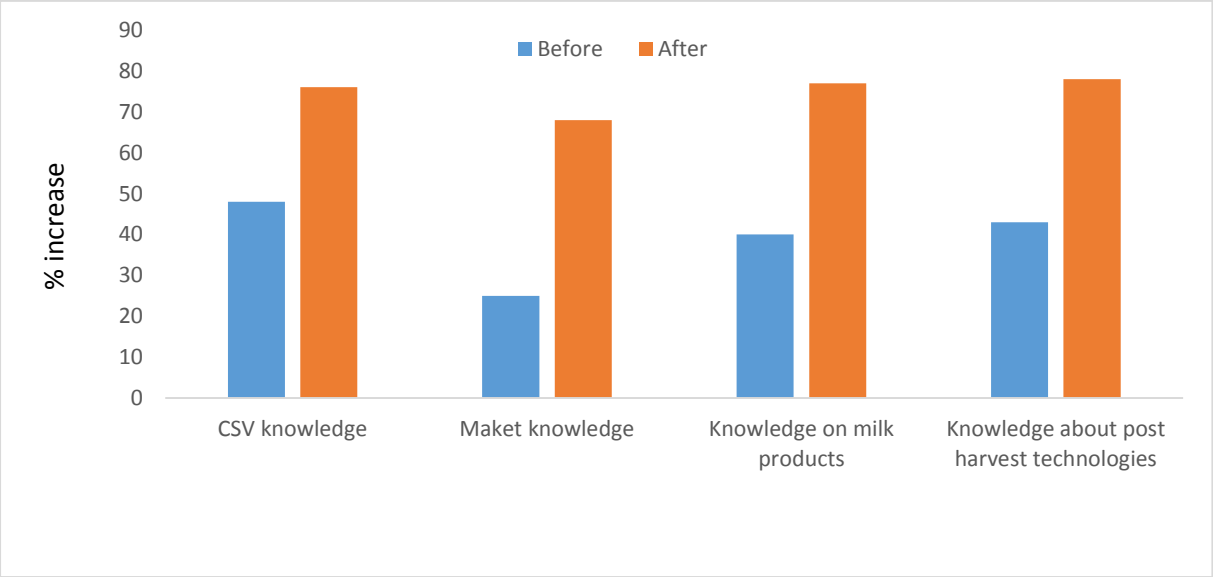

Figure 3. Knowledge increase of the participants after the training.

Further analysis of the data showed that their knowledge about climate smart technologies (green seeker, nutrient expert, farm budgeting, turbo happy seeder, DSR, crop diversification) increased from 48 to 77 percent. Market related knowledge (knowledge about potential markets for their products, preparation of farm products before it reaches market, strategy for marketing farm products, market linkage with firms ventures) increased from 25 to 68 percent, whereas understanding of post-harvest technologies (e.g. preservation of dairy and farm products, importance of moisture content of grain, better handling practices for farm products to seek high prices for better quality products and contributing in value chain systems) increased from 43 to 77 percent. Among the participants 77 percent felt an increased knowledge and understanding of dairy products processing.

Way forward

With the previous interventions made, we have observed a reasonable existing knowledge base about CASPs and CSVs. But with the new approach towards crop-dairy farming systems and market, there is observed additional interest among women farmers towards management of agriculture and its allied activities. With the advanced and women friendly techniques, they are getting inclined towards adoption of CSAPs such as nutrient expert, greenseeker and other activities. These not only will improve thier role in household income but also build their capacity for entrepreneur development may be individually or in groups. To capitalize the women labor force in most efficient manner, the only way to make them equipped with necessary knowledge and trainings through such initiatives at various public-private levels.

List of participants

S.No	Name	Age	Husband/Father name	Village	Qualification	Mobile number
1	Kavita	15	Suresh	Kutail	12th	9991829760
2	Babli	15	Vinod	Kutail	9th	8529425214
3	Sharbati devi	55	Kali ram	Bastada	5th	7027533315
4	Meenakshi	23	Mehar singh	Bastada	BA	9996729105
5	Monika	17	Naseeb singh	Bastada	12th	7027533315
6	Richa kamboj	21	Surjeet singh	Rindal	BBA	9992903861
7	Guddi	30	Krishn	Kutail	5th	9050107715
8	Sushma	30	Rinku	Daha	5th	9416090881
9	Suman Rani	41	Vinod Kumar	Daha	MA	9466812296
10	Monika	24	Jasmer	Bastada	8th	9991465955
11	Suman Lata	32	Rajesh Kumar	Bastada	10th	9996047768
12	Pravesh	35	Ravinder	Rindal	BA	9991132928
13	Preeti	23	Sumer Singh	Bastada	BA	9996729105
14	Suman Devi	25	Om Prakash	Bastada	12th	8930089640
15	Rekha	30	Pavan	Bastada	10th	9896121708
16	Arshi	17	Kitab Singh	Bastada	12th	8053147229
17	Priyanka	26	Sukhraj	Rindal	MA Eco	9991076922
18	Asha Kumari	17	Ghanshayam	Kutail	12th	8814948005
19	Amita kamboj	25	Pawan Kumar	Rindal	M.Com	7027931427
20	Vandana Kamboj	27	Sukhraj Kamboj	Rindal	MA BEd	8930250998
21	Santosh	45	Pawan Kumar	Rindal	8th	9416581813
22	Sarla	45	Satpal	Bastada	5th	9416012800
23	Parveena	33	Praveen	Bastada	8th	7206548276
24	Seva Devi	45	Rajkumar	Kutail	5th	
25	Monbati	45	Jagdeesh	Kutail	no	
26	Shiksha	25	Vijender	Rindal	5th	9896802061
27	Rooma Devi	28	Moni Nirmal	Rindal	12th	9991030595
28	Rita Devi	35	Balinder	Rindal	BA	9991347187
29	Rita	30	Amit	Rindal	12th	9996430082
30	Sewa	32	RajKumar	Kutail	5th	
31	Babli	15	N. Kumar	Kutail	10th	852942524

Picture 2. Group picture of all the participants during the training.

Program Schedule

Date	Time	Programme	Responsible person
23-05-2017	9:30 – 10:00 AM	Registration	Dr. Munmun & Kiranjot
	10:00 – 10:15 AM	Inauguration of workshop	Dr. Deepa &Tripti
	10:15- 10:30 AM	Tea Break	Dr Satyapal/ Kiran
	10:30 – 11:15 AM	Climate Smart Agriculture	Dr. M L Jat
	11:15 – 12:00 AM	Role of women in Agriculture	Dr. D K Gosain
	12:00 – 1:00 PM	Fodder Production	Sh. Kulbeer Singh
	1:00 – 2:00 PM	Lunch-NDRI	Dr Satyapal/ Kiran
	2:00 – 5:00 PM	Visit to NDRI- Cattle Yard	Sh. Mohar Singh
		Tea Break	Dr Satyapal/ Kiran
24-05-2017	9:30 – 10:15 AM	Scientific Dairy Farming	Dr Lathwal
	10:15 – 11:15 AM	Post Harvest Management of Fruits & Vegetables: Hands-on-training	Dr. Deepa Chandra
	11:15- 11:20 AM	Tea Break	Dr Satyapal/ Kiran
	11:20 – 12:00 PM	Value Chain & Market	Dr. D K Gosain
	12:00 – 1:00 PM	Dairy Products Making: Hands-on-training	Ms. Deepa Chandra
	1:00 – 2:00 PM	Lunch-NDRI	Dr Satyapal/ Kiran
	2:00 – 3:30 PM	Visit to climate smart platform, CSSRI	Madhu Choudhary and Ashim Datta
	3.30- 4.00	Feedback	Dr. Munmun Rai
	4:00 PM onwards	Concluding session	Dr. HS Jat and Dr. DK Gosian